

Appl. No. 09/920,978

REMARKS

Claim 16 is amended. Claims 20, 50-52, 54-55, 57-60 and 63-66 are cancelled. Claims 8-10, 14-16, 21 and 47-49 are pending in the application.

Independent claim 16 and corresponding dependent claims 8-10, 14-15, 21 and 48-50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wolf, "Silicon Processing for the VLSI Era", pp. 40, 52-54 and 555-557; Ding, U.S. Patent No. 5,814,563; and JP 200349071 ('071). The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Claims 8-10, 14-16, 21 and 48-49 are allowable over the cited combination of Wolf, Ding and '071 for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every limitation in any of those claims.

As amended independent claim 16 recites forming a layer of oxide material over a substrate, forming a layer comprising silicon nitride over the layer of oxide material and etching an opening through the silicon nitride layer through the layer of oxide material and into a semiconductive material of the semiconductor substrate. Claim 16 additionally recites that the etching occurs through a mask opening and utilizes a single etch chemistry consisting of ammonia and at least one fluorocarbon selected from the recited group. The amendment to claim 16 is supported by the specification at, for example, the paragraph bridging pages 8 and 9. Wolf discloses different etch conditions for silicon oxide layers, silicon nitride layers, and silicon layers. Ding discloses methods of etching a dielectric

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layer on a substrate where the dielectric layer comprises a layer of silicon oxide, BPSG or polysilicate glass (col. 3, ll. 54-61 and col. 5, ll. 66 through col. 6, ll. 13). The '071 reference discloses utilization of C_5F_8 combined with various additional agents depending upon the particular material to be etched, where C_5F_8 is utilized to avoid agents such as CF_4 , C_2F_6 and C_3F_8 (translation at table 1, paragraphs 5-6, 15, 19 and 22). None of the references, individually or as combined, disclose or suggest the claim 16 recited etching an opening through a silicon nitride comprising layer, through an oxide layer, and into a semiconductive material using a single etch chemistry. Accordingly, independent claim 16 is not rendered obvious by the cited combination of Wolf, Ding and '071 and is allowable over these references.

Dependent claim 50 is cancelled. Dependent claims 8-10, 14-15, 21 and 48-49 are allowable over the cited combination of Wolf, Ding and '071 for at least the reason that they depend from allowable base claim 16.

Claim 47 stands rejected under under 35 U.S.C. § 103(a) as being unpatentable over Wolf, Ding, '071 and Lucent Technologies "Bell Labs Scientists Develop 193-nm Single-Layer Photoresist". As set forth above, independent claim 16 is not rendered obvious by the combination of Wolf, Ding, and '071. Lucent Technologies discloses specific photoresist material and does not contribute toward suggesting the claim 16 recited etching an opening through a silicon nitride comprising layer, through an oxide layer, and into a semiconductive material using a single etch chemistry. Accordingly, independent claim 16 is allowable over Wolf, Ding, and '071 as further combined with Lucent Technologies. Claim 47 is allowable over Wolf, Ding, '071 and Lucent Technologies for at least the reason that it depends from allowable base claim 16.

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Claims 20, 51-52, 54-55, 57-60 and 63-66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over various cited combinations of Wolf, Ding, '071 and Lucent Technologies. Without admission as to the propriety of any of the Examiner's rejections, claims 51-52, 54-55, 57-60 and 63-66 are cancelled.

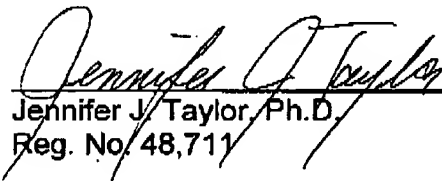
For the reasons discussed above, pending claims 8-10, 14-16, 21 and 47-49 are allowable: Accordingly, Applicant respectfully requests formal allowance of such pending claims in the Examiner's next action.

Respectfully submitted,

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By:


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